

07-22-02

GP 1645

#9



Docket No. 54

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Bowdish et al.
Serial No: 10/006,593 Examiner: Unassigned
Filed: December 5, 2001 Group: Unassigned
For: **Rationally Designed Antibodies**

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Kerry Longyear

Mark Farber
C/O
Alexion Pharmaceuticals, Inc.
352 Knotter Drive
Cheshire, CT 06419



Docket: 54

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INFORMATION DISCLOSURE STATEMENT

In accordance with Applicant's duty of disclosure under 37 C.F.R. §1.56, Applicants submit the enclosed reference for the Examiner's consideration.

It is respectfully requested that the reference(s) submitted with Form PTO-1449 be considered during Examination of the above-identified application and made of record therein. A copy of the reference(s) is/are enclosed. This submission is believed to be in compliance with 37 C.F.R. §1.97 and 37 C.F.R. §1.98.

The citation of the listed item(s) is not a representation that it constitutes a complete or exhaustive listing of prior art or that it constitutes prior art. The item(s) listed is/are submitted in good faith, but is/are not intended to substitute for the Examiner's search. It is hoped, however, that in addition to apprising the Examiner, it will assist the Examiner in identifying fields of search and in making as full and complete a search as possible.

The filing of this information disclosure statement is not an admission that the information cited herein is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56(b).

() This information disclosure statement is being filed within three (3) months of the filing date of this application.

() This information disclosure statement is being filed within three (3) months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application.

(X) To the best of Applicant(s) knowledge, this information disclosure statement is being filed before the date of mailing of a first Office Action in connection with this case.

() Enclosed is a certificate under 37 C.F.R. §1.97 (e) (i).

() Enclosed is a petition under 37 C.F.R. §1.97 (d)

() Please charge the petition fee of \$130.00 required under 37 C.F.R. §1.17 (i) (1) to Deposit Account No. 01-0483.

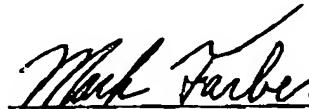
() As set forth in 37 C.F.R. §1.97 (c), to the best of Applicant(s) knowledge, this information disclosure statement is being filed before either the mailing of a final action under 37 C.F.R. §1.113 or the mailing of a notice of allowance under 37 C.F.R. §1.113, and is accompanied by the \$220.00 fee as provided for in 37 C.F.R. §1.17(p).

() Please charge the \$220.00 fee required by 37 C.F.R. §1.17(p) to Deposit Account No. 01-0483.

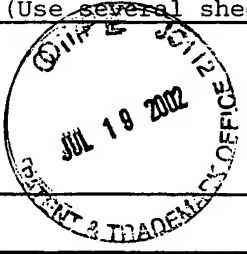
(X) Please charge any deficiency as well as any other fee(s) which may become due under 37 C.F.R. §1.16 and/or 37 C.F.R. §1.17 at any time during the pendency of this application, or credit any overpayment of such fee(s) to Deposit Account 01-0483. Also, in the event any extensions of time for responding are required for the pending application(s), please treat this paper as a petition to extend time as required and charge Deposit Account No. 01-0483 therefor. TWO COPIES OF THIS SHEET ARE ENCLOSED.

Early and favorable consideration of the case is respectfully requested.

Dated: 7-17-02


Mark Farber
Registration No. 34,159
Attorney for the Applicants

Alexion Pharmaceuticals, Inc.
352 Knotter Drive
Cheshire, CT 06410
(203) 271-8319

Form PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 54	SERIAL NO. 106593
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)	<p style="text-align: center;">ATTACH TO #9</p>	
	APPLICANT Bowdish et al.	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">RECEIVED JUL 29 2002</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">TECH CENTER 1000/2000</p>
	FILING DATE December 5, 2001	

U.S. PATENT DOCUMENT

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
LA	4 6 4 2 3 3 4	2/10/87	Moore et al.	530	588	
	4 8 1 6 3 9 7	3/28/89	Boss et al.	435	08	
	5 1 1 6 9 6 4	5/26/92	Capon et al.	536	27	
	5 4 2 8 1 3 0	6/27/95	Capon et al.	530	350	
	5 5 9 8 4 3 5	12/16/97	Robinson et al.	435	240	
	5 8 7 4 2 5 3	2/23/99	Tsujimoto et al.	435	69.4	
	5 8 7 6 9 6 1	3/2/99	Crowe et al.	435	69.1	
	5 9 1 9 7 5 8	7/6/99	Sytkowski	514	8	
	5 9 3 2 5 4 6	8/3/99	Barrett et al.	514	14	
	6 0 4 0 1 3 6	3/21/00	Garrard et al.	435	5	

FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Steven E. Cwirla et,al. "Peptide Agonist of the Thrombopoietin Receptor as Potent as the Natural Cytokine". June 13,1997. Science- Vol.276 pp. 1696-1699.
	Erkki Koivunent et,al. "Selection of Peptides Binding to the 5b1 Integrin from Phage Display Library". September 25,1993. The J. of Biological Chemistry. Vol.268, No.27, pp. 20205-20210.
	Erkki Koivunent et,al. "Phage Libraries Displaying Cyclic peptides with Different Ring Sizes:Ligand Specificities of the RDG-Directed Integrins". BIO/TECHNOLOGY Vol.13 March 1995 pp. 265-270
	Judith M. Healy et,al. "Peptide Ligands for Integrin avb3 Selected from Random Phage Display Libraries". January 13,1995 Biochemistry Vol.34, No. 12, 1995. pp.3948-3955.

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Form PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 54	SERIAL NO. 10/0001593
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)	APPLICANT Bowdish et al.	RECEIVED JUL 29 2002 FBI CENTER 1600/2900
	FILING DATE December 5, 2001	GROUP Art Unit: 1645

U.S. PATENT DOCUMENT

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
LAW	5 5 9 8 4 3 5	1/28/97	Williams et al.	379	26.1	
	6 1 7 2 1 9 7	1/9/01	McCafferty et al.	530	387.3	
	5 9 6 9 1 0 8	10/19/99	McCafferty et al.	530	387.3	
	5 2 2 3 4 0 9	6/29/93	Ladner et al.	435	69.1	
	5 8 3 7 5 0 0	11/17/98	Ladner et al.	435	69.7	
	5 5 7 1 6 9 8	11/5/96	Ladner et al.	435	69.7	
LAW	5 7 5 0 3 7 3	5/12/98	Garrard et al.	435	69.4	

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DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Shana M. Barbas et,al. "Regonition of DNA by Synthetic Antibodies". November 10,1993. J. AM. Chem. Soc., Vol.116, No.5. pp. 2161-2162.
	Shana M. Barbas et,al. "Human autoantibody reconition of DNA". March 1995. Proc. Natl. Acad. Sci. USA. Vol 92, pp.2529-2533
	Thomas A. Kunel. "Rapid and efficient site-specific mutagenesis without phenotypic selection". January 1985. Proc. Natl. Acad. Sci. USA Vol.82, pp.488-492.
	Su-jun Deng et,al. "Synthetic Antibody Gene Libraries for In Vitro Affinity Maturation". 1995, Methods in Molecular Biolog, Vol.51: Antibody Engineering Protcols. Pp.329-342.

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EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
LH	4 7 8 3 3 3 0	11/8/88	Furie et al.	424	153	
	5 2 1 9 9 9 6	6/5/93	Bodmer et al.	530	387.3	
	5 9 6 5 4 0 5	10/12/99	Winter et al.	435	69.6	
	5 8 6 9 4 5 1	2/9/99	Dower et al.	414	69.7	
	6 0 0 8 0 2 3	12/28/99	Oppen et al.	435	69.7	

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	Timo Hiltunen et,al. "Assembly of Humanized Antibody Genes from Synthetic Oligonucleotides Using a Single-Round PCR". March 10,1994. BioTechniques Vol.17, No.2.
	Xu-Bao Shi et,al. "Rapid PCR Construction of a Gene Containing Lym-1 Antibody Variable Regions". August, 1993. PCR Methods-And-Applications Vol.3, No.1. pp. 46-53.
	Achim Knappik et,al. "Fully Sythetic Human Combinatorial Antibody Libraries (HuCAL) Based on Modular Consensus Frameworks and CDR's Randomized with Trinucleotides". J. Mol. Biol.(2000). 296. pp.57-86.
	Carlos F. Barbas III et,al. "Assembly of combinatorial antibody libraries on phage surfaces: The gene III site". September 1991. Proc. Natl. Acad. Sci. USA Biochemistry. Vol. 88, pp. 7978-7982.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT	APPLICANT Bowdish et al.	RECEIVED JUL 29 2002 TECH CENTER 1600/2000 GROUP Art Unit: 1600
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EXAMINER INITIALS	DOCUMENT NUMBER							DATE	NAME	CLASS	SUBCLASS
<i>MA</i>	6	0	0	8	0	2	3	12/28/99	Oppen et al.	435	69.7
<i>MA</i>	5	2	6	0	4	1	7	11/9/93	Grant et al.	530	351
<i>MA</i>	5	5	9	3	6	6	6	1/14/97	McDonald	424	85.1

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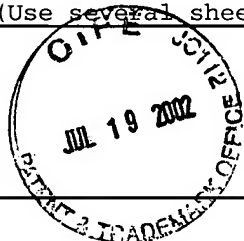
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Robert E. Hawkins et,al. " Selection of Phage Antibodies by Binding Affinity". April,1992. J. Mol. Biol. 226, pp.889-896.
	Alexander A. Kortt et,al. "Recombinant anti-sialidase single-chain variable fragment antibody". 1994. Eur. J. Biochem. 221, pp.151-157.
	Kaija Alfthan et,al. "Properties of a single-chain antibody containing different linker peptides". 1995. Protein Engineering Vol.8, No.7, pp.725-731.
	Dennis R. Burton et,al. "Human Antibodies from Combinatorial Libraries". 1994, Advances in Immunology, Vol.57, pp.191-280.

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	Alexander A. Kortt et,al. "Recombinant anti-sialidase single-chain variable fragment antibody". 1994. Eur. J. Biochem. 221, pp.151-157.
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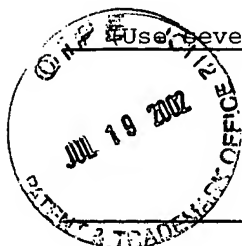
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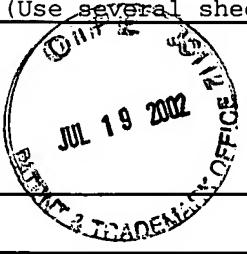
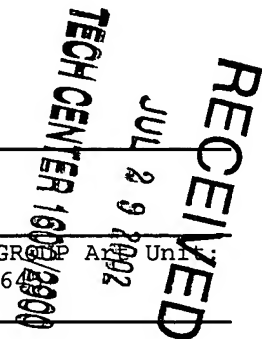
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Irene M. Lang et,al. "Purification of Storage Granule Protein-23". November 22,1996. The J. of Biological Chemistry. Vol. 271, No.47, pp.30126-30135.
	Don L. Siegel et,al. " Isolation of cell surface-specific human monoclonal antibodies using phage display and magnetically-activated cell sorting: applications in immunohematology". 1997, J. of Immunological Methods, 206 pp.73-85.
	John de Kruif et,al. "Leucine zipper Dimerized Bivalent and Bispecific scFv Antibodies from a Semi-synthetic Antibody Phage Display Library". March 29,1996, The J. of Biological Chemistry, Vol.271, No.13, pp.7630-7634.
	Peter Pack et,al. "Miniantibodies: Use of Amphipathic Helices To Produce Functional, Flexibly Linked Dimeric Fv Fragments with High Activity in Escherichia coli". February 18,1992, Biochemistry, Vol.31, No.6, pp.1579-1584.

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	Philipp Holliger et,al. "Engineering bispecific antibodies". 1993, Biotechnology, Vol.4, pp.446-449.
	Sheri A. Kostelny et,al. "Formation of a Bispecific Antibody By The Use Of Leucine Zippers". March 1,1992, The J. of Immunology, Vol,148, No.5, pp.1547-1553.
	Baek Kim et,al. "Dimerization of a Specific DNA-Binding Protien on the DNA". January 1992, Science, Vol.255, pp.203-206.
	Paul Carter et,al. "High level Esherichia coli expression and production of a bivalent humanized anrtibody fragment" Bio/Technology Vol.10 pp.163-167.
	William J.van Heeckeren et,al. "Role of the conserved leucines in the leucine zipper dimerization motif of yeast GCN4". June 12,1992, Nucleic Acids Research, Vol.20, No.14, pp.3721-3724.

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APPLICANT

Bowdish et al.

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DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Karl E. Klose et,al. "The major Dimerization Determinants of the Nitrgen Regulatory Protein NTRC from Enteric Bacteria Lie in Its Carboxy-terminal Domain". (1994) J. Mol. Biol. Vol.241, pp.233-245.
	Liesbeth Spaeny-Dekking et,al. "Gin Invertase of Bacteriophage Mu Is a Dimer in Solution, with the Domain for Dimerization in the N-Terminal Part of the Protien". (1995) Biochemistry Vol.34, pp.1779-1786.
	Paola Gallinari et,al. "Localization of a 34-Amino-Acid Segment Implicated in Dimerzation of the Herpes Simplex Virus Type 1 ICP4 Ploypeptide by a Dimerization Trap". June 1994, J. of Virology, Vol.68, No.6, pp.3809-3820.
	Gavin MacBeath et,al. "A Small, Thermosable, and Monofunctional Chorismate Mutase from the Archeon Methanococcu jannaschii". (1998) Biochemistry Vol.37, pp.10062-10073.

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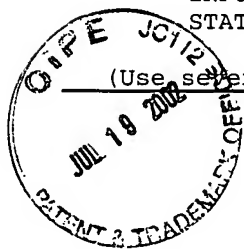
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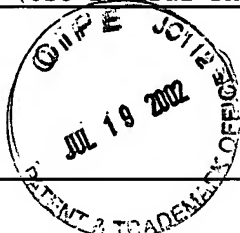
	Gavin MacBeath et,al. "Redesigning Enzyme Topology by Directed Evolution". March 20,1998, Science. Vol.279; pp.1958-1961.
	Paul Carter et,al. "High Level Escherichia Coli Expression and Production of a Bivalent Humanized Antibody Fragment". February 1992, BIO/TECHNOLOGY Vol.10, pp.163-167.
	Iphigenia Leonidou Koumenis et,al. "Modulating pharmacokinetics of an anti-interleuken-8F(ab') ₂ by amine-specific PEGylation with preserved bioactivity". International J. of Pharmaceutics (2000), Vol.198, pp.83-95.
	Marc Better et,al. "Potent anti-CD5 ricin A chain immunoconjugates from bacterially produced Fab' and F(ab') ₂ ". January 1993, Proc. Natl, Acad. Sci. USA, Vol.90, pp.457-461, Immunology.

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Frederic J. de Sauvage et,al. "Stimulation of megakaryocytopoiesis and thrombopoiesis by the c-Mpl ligand". June 1994, Nature, Vol.369, pp.533-538.
	Jonathan G. Drachman et,al. "Thrombopoietin Signal Transduction Requires Functional JAK2, Not TYK2*". May 7,1999, The J. of Biological Chemistry, Vol.274, No.19, pp.13480-13484.
	Toshio Kitamura et,al. "Establishment and Characterization of a Unique Human Cell Line That Proliferates Dependently on GM-CSF, IL-3, or Erythropoietin" February 28,1989, J. of Cellular Physiology Vol.140 pp.323-334.
	Bruce A. Witthuhn et,al. "JAK2 Associates with the Erthropoietin Receptor and Is Tyrosine Phosphorylated and Activated following Stimulation with Erythropoien". July 30,1993, Cell, Vol.74, pp.227-236.

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